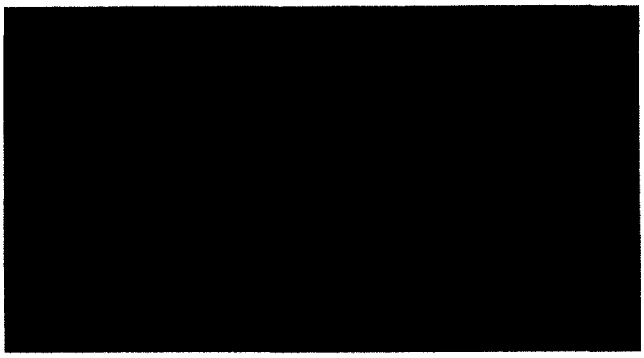
Proposed Plan Fact Sheet

Allied Paper, Inc./ Portage Creek/Kalamazoo River Superfund Site

King Highway Landfill Operable Unit Kalamazoo, Michigan

DNR



■ *Introduction* ■

This Proposed Plan Fact Sheet describes the remedial alternatives being considered for the King Highway Landfill Operable Unit (KHL-OU) of the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site (see map on page 2), and identifies a preferred remedial alternative and the rationale for this preference.

This Proposed Plan summarizes information that can be found in greater detail in the ***Remedial Investigation*** (RI) report, ***Risk Assessment*** (RA) report, ***Alternatives Array Document*** (AAD) report, ***Focused Feasibility Study*** (FFS) report, and other documents written for the KHL-OU. The public is encouraged to review these documents at one of the information repositories listed on page 10.

This document is issued by the Michigan Department of Natural Resources (MDNR), the lead agency for activities at this *Superfund* site. Region 5 of the U.S. Environmental Protection Agency (EPA) is providing technical support for this response action. The MDNR, in consultation with the EPA, will select a final remedy for the KHL-OU only after the public comment period has ended and the information submitted during this time has been reviewed and considered. The public is encouraged to submit comments on all the alternatives, and on the information that supports these alternatives, to the MDNR Project Manager (see Community

A Public Meeting will be held Wednesday, September 14, 1994 at 7:00 PM in the Comstock Auditorium, Comstock, Michigan

2107 N 26th

Comments may be submitted either verbally or in writing at the public meeting, or you can send written comments postmarked no later than October 14, 1994 to the MDNR (address on page 10)

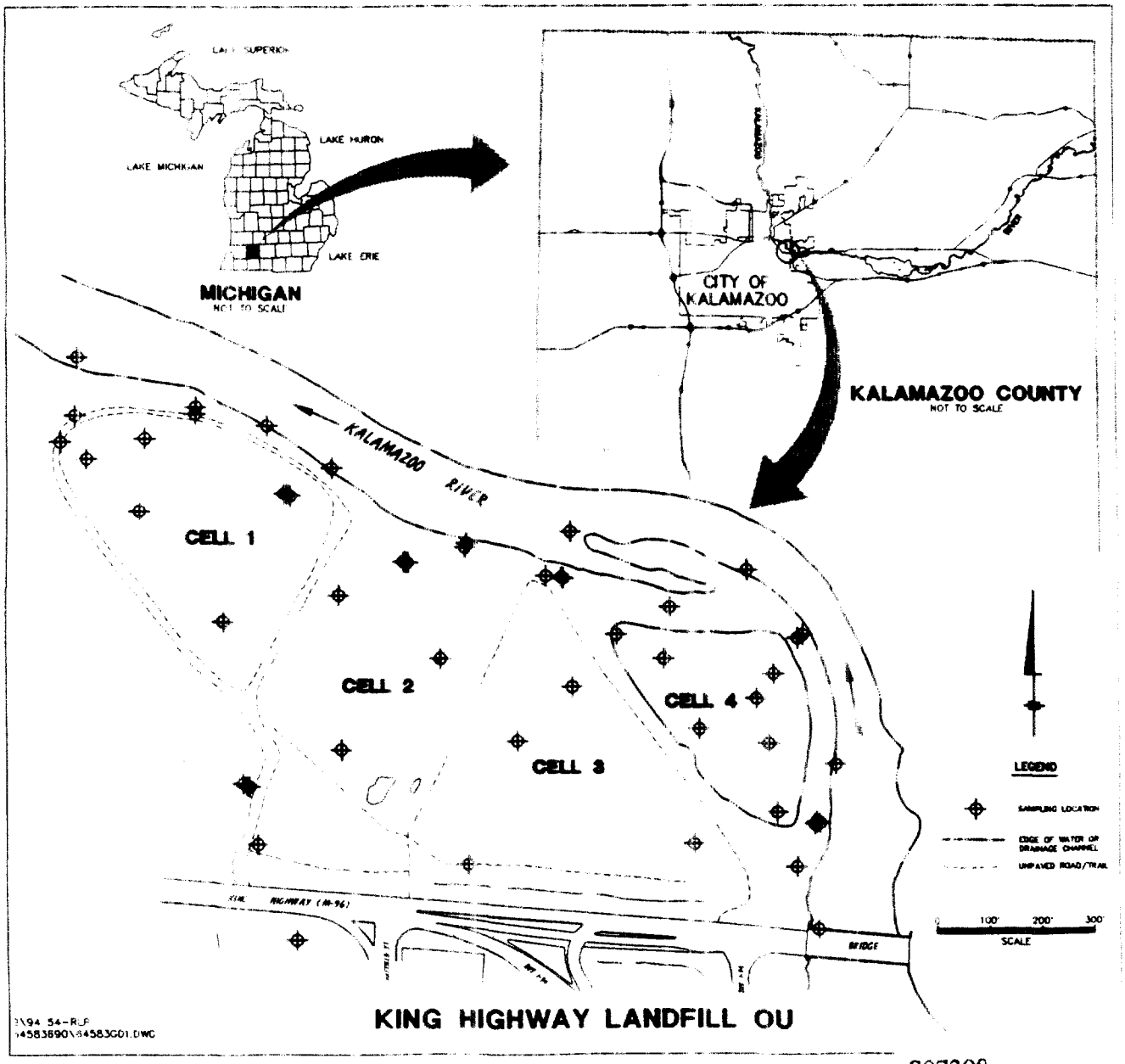
S07307

Participation section on page 10). The final remedy, as presented in the *Record of Decision (ROD)*, could differ from this Proposed Plan, depending upon new information or input the MDNR and EPA receive during the public comment period.

■ *History of the KHL-OU* ■

Site History. The KHL-OU is located in the city and township of Kalamazoo, Michigan. The KHL-OU was originally a series of settling lagoons that were used from the late 1950s to 1977 to *dewater* paper-making *residuals* from the mill now owned by Georgia-Pacific Corporation. These *residuals* are primarily a mixture of clay and wood fiber. In 1977, Georgia-Pacific installed filter presses at the mill to separate the solids. Since 1987, *dewatered residuals* from the mill's belt filter presses have been disposed of at the KHL-OU

The KHL-OU was first licensed by the MDNR in 1983 under the *Michigan Solid Waste Management*



S07308

Act (Act 641) as a *Type III landfill*. This license was last renewed in May 1993.

When the Allied Paper, Inc./Portage Creek/ Kalamazoo River Superfund Site was placed on the *National Priorities List (NPL)*, the KHL-OU was not a part of the *Superfund* site. The KHL-OU was added later as an area to be investigated as a potential source of *polychlorinated biphenyls (PCBs)* to the Kalamazoo River.

What is now Georgia-Pacific Corporation's Kalamazoo Mill has a history as an important recycler of wastepaper. Between 1957 and 1971, *PCBs* were used in the production of carbonless copy paper. It is believed that *PCBs* came to be present in the *residuals* at the KHL-OU through the recycling of wastepaper that included some of this carbonless copy paper. By the late 1970s, *PCBs* were reduced to very low levels in wastepaper.

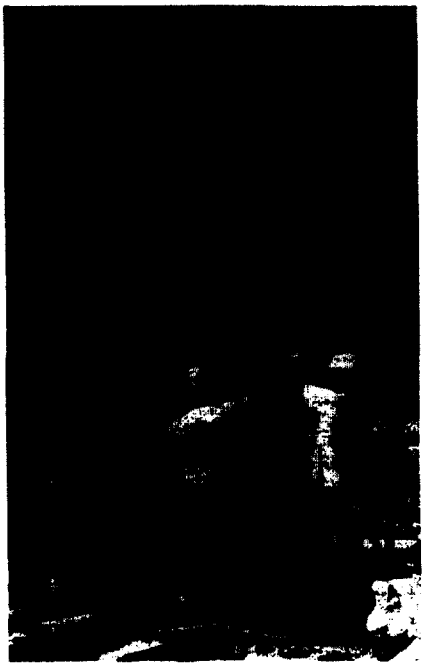
RI/FFS Background. The *Remedial Investigation/Focused Feasibility Study (RI/FFS)* was performed for the KHL-OU from July 1993 to August 1994 by the Potentially Responsible Parties, the Kalamazoo River Study Group (KRSG), whose members include Georgia-Pacific Corporation, Allied Paper, Inc./HM Holdings, Simpson Plainwell Paper Company, and James River Corporation. A total of 26 borings, seven sediment cores, and 14 new monitoring wells were installed, and three surface water samples were collected during the RI (sampling locations shown on KHL-OU map, page 2). Each of the approximately 125 resulting samples was analyzed for the presence of 150 different chemicals

Area to be Addressed. *Residuals* are currently present in four fill areas (Cell 1, 2, 3, and 4) of the KHL-OU (see map page 2). Cell 4 was excavated to the water table in 1982 and currently collects surface water runoff. Although unfilled, Cell 4 contains a layer of *residuals* within the cell up to 5.5 feet thick (approximately 6,800 cubic yards). The total estimated volume of *residuals* in all four cells is 282,000 cubic yards

PCBs are the primary constituent of concern. They were detected in the *residuals* at the KHL-OU, but not in the groundwater under it. The RI report provides information regarding the concentrations of other constituents present at the KHL-OU. The other constituents, when detected, were below levels that would pose risks to human health or the environment.

■ *Summary of Site Risks* ■

Risk Assessment (RA) Approach. During the *RI/FFS*, an analysis was conducted to assess the health and environmental risks that could result if the KHL-OU was not remediated. This analysis is commonly



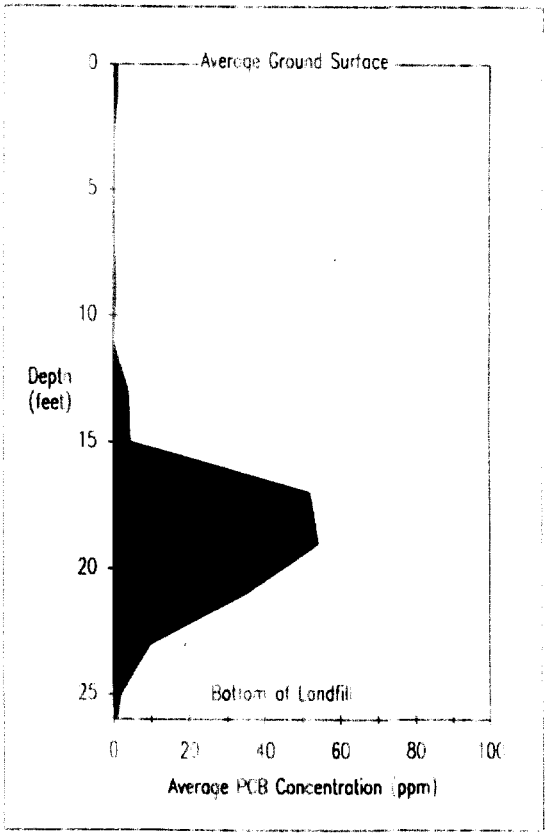
Fourteen new monitoring wells were installed during the RI. Overall, more than 125 samples of groundwater, surface water, soils and *residuals* were collected from the KHL-OU and analyzed.

S07309

referred to as a *Baseline RA*. The *RA* focused on the health risks that could result from exposure to *PCBs* if soil or surface water were to come in contact with the skin or be ingested by on-site workers, trespassers, and anglers.

Consequences of Dike Collapse. The *RA* addressed the risks that could result from the potential failure of the landfill dikes if not maintained. The release of *PCBs* from failure of the dikes accounts for the greatest future risk posed by the KHL-OU.

Residuals on the dikes of the KHL-OU along the river's edge are a potential source of *PCBs* to the river via surface runoff and direct contact with the river. They also represent a potential source of exposure to anglers and other trespassers on the dikes.



Vertical profile of landfill average PCB concentrations (Cells 1, 2, & 3). PCB concentrations are low near the surface of the KHL-OU, and increase with depth into the older *residuals*.

Comparison of Risks and Remediation Goals. The primary exposure pathway to be addressed by remedial alternatives is the potential release of *PCBs* in the landfill's deeper *residuals* to the Kalamazoo River. All three alternatives proposed could meet remediation goals by effectively reducing potential exposures and associated risks to acceptable levels.

■ *Summary of Remedial Alternatives* ■

As part of the AAD development process, a total of seven potentially applicable technology types (e.g., in-situ containment/control, removal, etc.), which incorporated 60 different process options (e.g., capping, excavation, etc.) were screened with respect to technical implementability. It should be noted that as part of this preliminary screening, the No Action alternative (which is typically incorporated into an FFS for comparative purposes) was eliminated from further consideration since it would not control potential migration of *residuals*.

As a result of the above screening efforts, three potential remedial alternatives were assembled for consideration in the FFS.

The remedial alternatives considered for the KHL-OU are:

- **Alternative 1: Landfill Closure (Containment and Capping in Accordance with *Act 641*);**
- **Alternative 2: Removal and Disposal of *Residuals*; and**
- **Alternative 3: Removal, Treatment, and Disposal of *Residuals*.**

All cost estimates presented with the following descriptions of the three alternatives are expressed in 1994 dollars and are based on conceptual engineering and design. Capital costs consist of direct costs (e.g., construction, equipment, transportation, disposal, analytical, treatment, and contingency) and indirect costs (e.g., engineering, legal, and permitting fees) incurred by implementing a specific alternative. Operation and Maintenance (O&M) costs (required for Alternative 1 only) refer to long-term, post-construction items necessary to ensure continued effectiveness of a remedial action. For purposes of this document, O&M costs were developed for the first year of system operation and a 30-year present worth (PW) cost analysis. Total net PW cost represents the sum of money, if invested in the base year and disbursed as needed, that would be sufficient to cover costs of a remedy over its planned life (assumed 30 years).

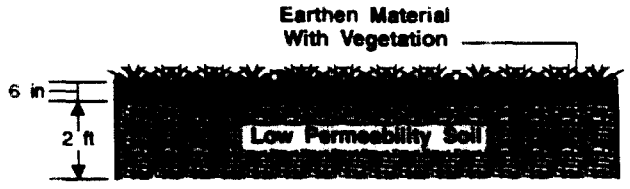
Alternative 1 - Landfill Closure (Containment and Capping in accordance with *Act 641*)

Capital Cost: $1.6 - $2.7 million
O&M Cost: $125,000 a year
Net PW Cost: $3.2 - $4.3 million (Capital and O&M)
Implementation Timeframe: 1.0 years

Alternative 1 involves the containment of the *residuals* via landfill closure, reinforcement of the existing dikes, and long-term monitoring. Closure of the landfill would be in accordance with *Act 641* regulations and the landfill's current permit. Reinforcement of the existing dikes would increase stability and minimize the potential for dike failure under flood conditions. Long-term monitoring involves the collection and analysis of groundwater, surface water, and soil samples to track the effectiveness of the cap. Frost protection considerations will be further evaluated during the remedial design of the cap.

Alternative 1 also includes institutional controls such as fencing, deed restrictions, and sign posting to reduce potential human exposure to soil and other media.

As previously stated, the landfill cap being considered for use is an *Act 641* cap. An *Act 641* cap will meet the requirements of current regulations and the existing permit. A cross-section sketch of this type of cap is shown below.



Example of an *Act 641* cap.

To reinforce the existing dikes, stability measures such as installing a *gabion wall* would be required. Erosion control measures such as *rip-rap* would also be required.

Example of a *gabion wall.*

S07311

Alternative 2 - Removal and Disposal of *Residuals*

Capital Cost: $55.5 - $66.5 million
O&M Cost: None
Net PW Cost: $55.5 - $66.5 million (Capital and O&M)
Implementation Timeframe: 2.9 years

Alternative 2 includes the excavation, *dewatering*, and off-site disposal of all *residuals* from the KHL-OU. *Dewatering* of the *residuals* would be utilized to provide a material acceptable for disposal and transport to an off-site commercial landfill.

Water obtained from *residuals dewatering* would be treated on-site to remove any *PCBs* prior to discharge.

Based on the results of the RI, approximately 76,000 cubic yards of *residuals* contain *PCB* concentrations greater than 50 *parts per million (ppm)*, and would be regulated by the *Toxic Substances Control Act (TSCA)*. Such *residuals* would be disposed of at an existing commercial *TSCA* disposal facility.

Approximately 206,000 cubic yards of *residuals* at the KHL-OU have *PCB* concentrations less than 50 *ppm*, and would be disposed of at a commercial sanitary landfill.

Following excavation and disposal of the *residuals*, the KHL-OU would be graded to match the surrounding area. A minimum 6-inch layer of topsoil with vegetative cover would be installed to minimize erosion.

The capital costs associated with this alternative are more expensive than Alternative 1 due to the high cost of off-site disposal of *residuals* at a *TSCA* facility (off-site *TSCA* disposal represents approximately 50 to 70 percent of the total capital cost for Alternative 2).

Alternative 3 - Removal, Treatment, and Disposal of *Residuals*

Capital Cost: $55.0 -$426.8 million
O&M Cost: None
Net PW Cost: $55.0 -$426.8 million (Capital and O&M)
Implementation Timeframe: 4.4 years

Alternative 3 is the same as Alternative 2, with the addition of a treatment step. *Residuals* with a *PCB* concentration greater than 50 *ppm* (76,000 cubic yards) would be treated either on-site or off-site via incineration prior to disposal in a commercial sanitary landfill.

In addition, the 206,000 cubic yards of *residuals* containing less than 50 *ppm* of *PCB* that do not require treatment would be disposed of at a commercial sanitary landfill.

The capital costs associated with this alternative are more expensive than Alternatives 1 and 2 due to the high cost of incineration (on-site or off-site) of the *residuals* (incineration represents approximately 50 to 90 percent of the total capital cost for Alternative 3).

■ *Evaluation of Alternatives and the Preferred Alternative* ■

Preferred Alternative. Based on the MDNR's review of the FFS, the preferred alternative for remediating the KHL-OU is Alternative 1 - Landfill Closure (containment and capping in accordance

with *Act 641*). Based on current information, this alternative best satisfies the required nine criteria used to evaluate alternatives. The following section compares the preferred alternative against the nine evaluation criteria and the other two alternatives under consideration.

The table presented on page 8 further summarizes the comparison of Alternatives against the criteria.

■ *Evaluation Criteria* ■

In accordance with EPA guidance, two threshold criteria and five primary criteria must be evaluated. In addition, state and community acceptance are required and are evaluated following public comments on the Proposed Plan. Public comments are then reviewed and addressed during the final decision process and *ROD* preparation.

Overall Protection of Human Health and Environment (Threshold Criteria). Overall protection of human health and environment addresses whether a remedy provides adequate protection and describes how risks posed through each exposure pathway are eliminated, reduced, or controlled with treatment, engineering controls, or institutional controls.

Alternatives 1, 2, or 3, would provide adequate protection of human health and the environment by eliminating, reducing, or controlling risk through engineering control and institutional controls

Compliance with *ARARs* (Threshold Criteria). Compliance with *applicable or relevant and appropriate requirements (ARARs)* addresses whether a remedy will meet all of the *ARARs* of other federal and state environmental laws or justify invoking a waiver.

Alternative 1 does not appear to meet the *TSCA* disposal requirements. However, *TSCA* does not apply since Subpart D of 40 CFR 761 does not require that *PCBs* and *PCB* items disposed of in a place set aside for the purpose of containing waste prior to February 1979 be removed for disposal.

Alternatives 1, 2, or 3, would be in compliance with state and federal *ARARs*. Specifically, Alternative 1 would comply with the existing permit closure requirements of *Act 641*, since the KHL-OU is a permitted landfill.

Long-term Effectiveness and Permanence (Primary Criteria). Long-term effectiveness and permanence refers to the amount of remaining risk and the ability of a remedy to maintain reliable protection of human health and the environment over time after cleanup goals have been met.

Alternatives 1, 2, and 3 would provide for long-term effectiveness and permanence via dike stability and isolation or removal/treatment of *residuals*.

Reduction of Toxicity, Mobility, or Volume (Primary Criteria). Reduction of toxicity, mobility, or volume through treatment is the anticipated performance of the treatment technologies that may be employed in a remedy.

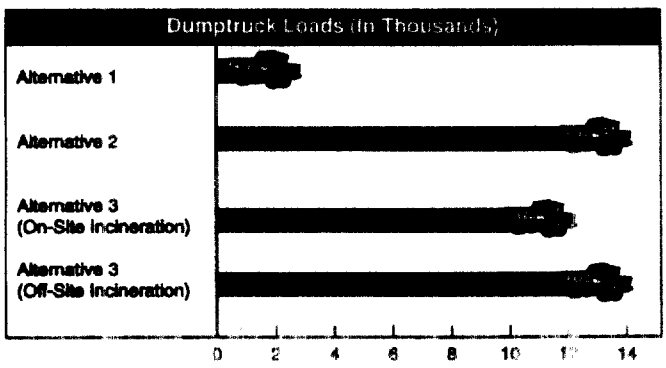
Alternatives 1 and 2 eliminate the mobility of PCBs, however, not through treatment. Alternative 1 eliminates PCB mobility through containment; Alternatives 2 and 3 eliminate mobility through

Evaluation Criteria	Alternative 1	Alternative 2	Alternative 3
1. Overall Protection of Human Health and the Environment	Long-term protection is provided through landfill closure (Act 641 cap), dike stabilization, erosion control, long-term monitoring, and institutional controls (e.g., deed restrictions).	Long-term protection is provided through removal of the residuals.	Long-term protection is provided through removal and treatment of the residuals.
2. Compliance with ARARs	Relevant federal and state laws are satisfied.	Relevant federal and state laws are satisfied.	Relevant federal and state laws are satisfied.
3. Long-term Effectiveness	Proper design, maintenance, on-going monitoring, and control provide long-term reliability	After removal and disposal of residuals, long-term exposure and risk is reduced or eliminated	After removal, disposal, and incineration of residuals, long-term exposure and risk is reduced or eliminated.
4. Reduction of Toxicity, Mobility, or Volume	Mobility is reduced, toxicity may lessen in the long-term, and volume is not reduced.	Mobility is reduced, toxicity may lessen in the long-term, and excavation may increase volume.	Mobility, toxicity, and volume are all reduced through treatment.
5. Short-term Effectiveness	Short-term effectiveness is high because landfill closure will not disturb the residuals. Some short-term impacts may result from construction activities (e.g., truck traffic). Construction will take approximately 1.0 years to complete.	Short-term impacts include increased exposure and risk due to the disturbance, excavation and truck transport of residuals. Construction (e.g., excavation, transport, and disposal) will take approximately 2.9 years to complete.	Same short-term impacts as Alternative 2, plus risks associated with incinerator air emissions. Due to treatment, construction (e.g., excavation, transport, and incineration) will take approximately 4.4 years to complete.
6. Implementability	Implementation is feasible both technically and administratively.	Implementation is feasible both technically and administratively.	Implementation is inhibited by technical and administrative difficulties related to incineration.
7. Cost	$3.2 to $4.3 million (includes O&M present worth costs)	$55.5 to $66.5 million	$55.0 to $426.8 million
8. State (MDNR) Acceptance	The MDNR supports Alternative 1 as the preferred remedy.		
9. Community Acceptance	Evaluation of community acceptance of alternatives will be conducted after the public comment period.		

residuals removal. Alternative 3 also provides a reduction in mobility, toxicity, and volume through treatment.

Short-term Effectiveness (Primary Criteria). Short-term effectiveness refers to the speed with which the remedy achieves protection, and any adverse impacts on human health and the environment that may result during the construction and implementation period.

Alternative 1 has some short-term potential negative impacts, such as traffic considerations during delivery of cap materials. However, Alternative 1 has the greatest short- term effectiveness since the project could be completed within a shorter time period than Alternatives 2 and 3. Alternatives 2 and 3, which include excavation of *residuals*, have the greatest short-term negative environmental impacts. Air emission and traffic considerations are two examples where compliance with short-term effectiveness criteria would be difficult for either Alternative 2 or 3.

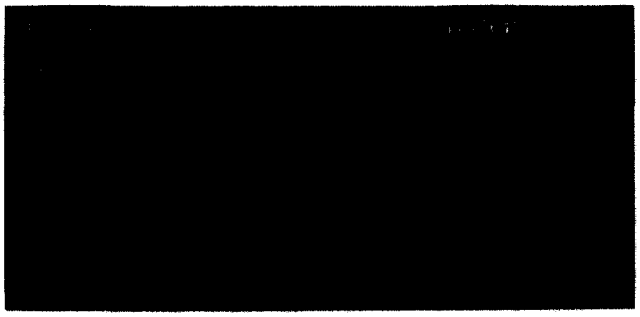


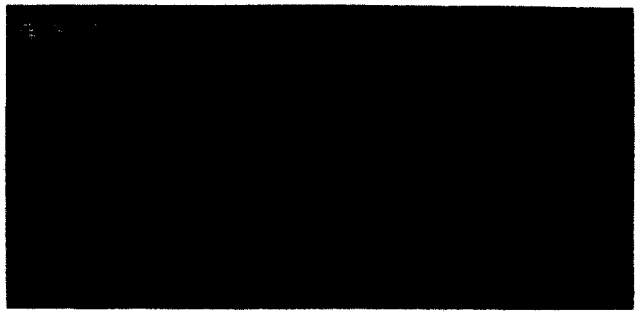
The approximate timeframe associated with implementation of Alternative 1 is 1.0 years. In comparison, implementation of Alternative 2, which includes the excavation and off-site disposal of all *residuals* and the restoration of the former cell areas, would take approximately 2.9 years to complete. Alternative 3, which involves incineration as a treatment process, has the longest implementation requirements. This is due to project schedule uncertainties associated with the permitting processes, incinerator acquisition/construction/ modification, test burn requirements, and trial runs required prior to approval of the treatment technology for the *residuals*. Excavation, incineration, and off-site disposal of those *residuals* to be treated, and restoration of the former cell areas, would take approximately 1.9 years to complete. It is noted, however, that this timeframe does not account for the uncertainties discussed above, which could extend the implementation timeframe of Alternative 3 by 2.5 years to 4.4 years.

Implementability (Primary Criteria.) Implementability is the technical and administrative feasibility of a remedy, including the availability of material and services needed to implement the chosen solution.

Alternatives 1 and 2 meet the implementation criteria stated above. However, based on the restricted availability of mobile incineration units (i.e. may require six months to one year lead time for scheduling purposes), and the testing required for agency approval (i.e. stack air tests, trial burns, etc.) the implementability of Alternative 3 may be more prohibitive.

Cost (Primary Criteria) Cost includes the capital and O&M costs. The present worth cost of the preferred alternative (Alternative 1) is $3.2 to $4.3 million, which is the lowest cost alternative. The highest cost alternative is Alternative 3 at $55 to $426.8 million. The cost of Alternative 2 is $55.5 to $66.5 million.





State Acceptance. State acceptance indicates whether the MDNR, based on its review of the Proposed Plan and comparison with state laws, concurs with, opposes, or has no comment on the preferred alternative.

The MDNR, the lead agency and representative of the State of Michigan, by releasing the Proposed Plan has tentatively approved it. However, this is subject to further MDNR review following the public comment period

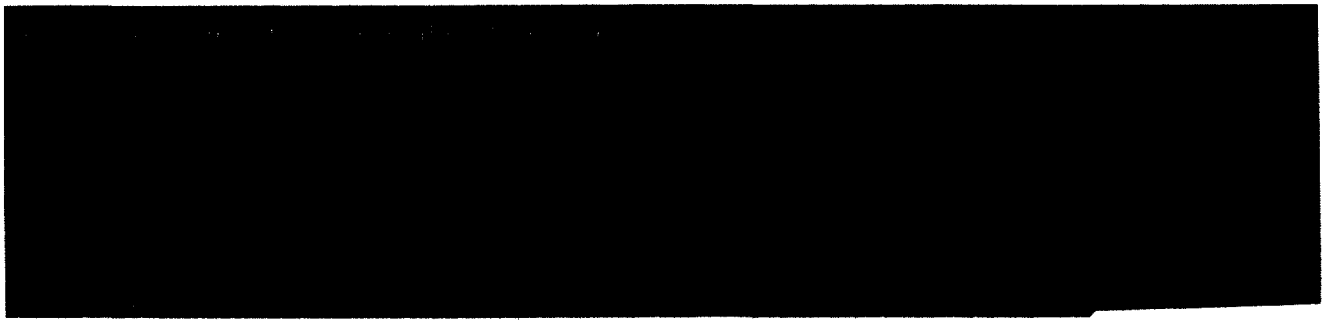
Community Acceptance. Community acceptance summarizes the public's general response to the Alternatives described in the Proposed Plan. This criterion will be assessed in the Record of Decision following a review of the public comments received on this Proposed Plan.

■ *Community Participation* ■

The MDNR is requesting your input on the remediation methods described in this Proposed Plan. A 30-day public comment period begins on September 14 and continues through October 14, 1994. A public meeting will be held during the comment period where the MDNR will present the Proposed Plan, answer questions, and accept both written and oral comments. The public meeting is scheduled for Wednesday, September 14, 1994. Comments may be submitted at the public meeting, or comments can be sent postmarked no later than October 14, 1994 to the addresses below. For your convenience, a mailing list/comment return mailer is attached to this document.

The MDNR will prepare a response to the public comments. The comments received and MDNR responses to these comments will be provided in the Responsiveness Summary section of the *ROD*.

This document is issued under section 117(a) of the *Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)* and was prepared in accordance with the EPA's ***Guidance on Preparing Superfund Decision Documents.***



S07316

Glossary

100 year flood - a flood that has a one percent or greater chance of recurring in any given year, or a flood of a magnitude equaled or exceeded once in 100 years (on the average over a significantly long period).

Applicable or Relevant and Appropriate Requirements (ARARs) - the Federal and State requirements that a selected remedy will attain. These requirements may vary between alternatives.

Baseline Risk Assessment (RA) - an assessment which provides an evaluation of the risk to human health and the environment in the absence of remedial action.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) - CERCLA, or more commonly "Superfund", was authorized by Congress in 1980 and established the National Priorities List (NPL), the National Contingency Plan (NCP), and a system of liability for potentially responsible parties (PRPs) to remediate or pay for remediation at hazardous waste sites.

Dewater - to remove water from wastes, soils, or chemicals.

Gabion Wall - a dike stabilization measure consisting of rock secured within wire mesh boxes.

MDNR Act 641 - Michigan's Solid Waste Management Act.

National Priorities List (NPL) - is the EPA's list of uncontrolled or abandoned hazardous waste sites eligible for long-term cleanup under the Superfund Remedial Program.

Part per Million (ppm) - one ppm is equal to one part of a substance in one million parts of water. One ppm is also equivalent to one milligram per kilogram (mg/kg) on a dry weight basis for solids.

Permeability - the ability of a solid to have water flow through it.

Polychlorinated Biphenyls (PCBs) - a class of 209 discrete chemical compounds, called congeners, in which one to ten chlorine atoms are attached to biphenyl.

Record of Decision (ROD) - a public document that explains which cleanup alternative will be used at a National Priorities List site and the reasons for choosing the cleanup alternative over other possibilities.

Remedial Investigation/Focused Feasibility Study (RI/FFS) - two distinct but related studies, normally conducted together, intended to define the nature and extent of contamination at a site and to evaluate appropriate, site-specific remedies.

Residuals - by-product materials associated with the manufacturing of paper.

Rip-Rap - an erosion control measure consisting of loose rock placed along a river bank.

Superfund - the common name for the federal program established by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended in 1986. Superfund is a trust fund to investigate and clean up abandoned or uncontrolled hazardous waste sites.

Toxic Substances Control Act (TSCA) - TSCA mandates the testing prior to commercial manufacture of any new chemical, and disclosure of information regarding its toxicity. TSCA also imposes use restrictions on certain chemical substances, such as PCBs. PCBs are regulated under Section 6 of TSCA and their use is prohibited except in totally closed equipment.

Type III Landfill - A sanitary landfill that is not a municipal solid waste landfill or a hazardous waste landfill. According to MDNR *Act 641*, commercial/demolition waste landfills and industrial waste landfills are classified as Type III.

DNR

MAILING LIST/PUBLIC COMMENT RETURN MAILER

If you did not receive this Proposed Plan Fact Sheet by mail, you are not on the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund site mailing list. If you wish to be placed on the mailing list, please print your name and address, and then fold, tape, stamp, and mail this form to:

MDNR-ERD,
Superfund Section
P.O. Box 30426
Lansing, Michigan 48909

NAME: _____

ADDRESS: _____

_____

_____

CITY/STATE: _____ ZIP: _____

REPRESENTING _____

DAY TIME PHONE NUMBER: _____

KHL-OU Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund site

Or you may contact Mr. Scott Cornelius of the MDNR at 517-373-7367

The MDNR and the EPA want to hear from you regarding the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund site and the proposed remedial action described in this Proposed Plan for King Highway Landfill Operable Unit. You may use the space below to comment on this proposed plan. You may mail your comments on this form to the MDNR Project Manager or attend the Public Meeting scheduled for September 14, 1994, and present your comments during the meeting. You may also call the Project Manager at the number provided above.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

S07318

(attach additional sheets as necessary)

3941188A.PM4